A Socioeconomic Atlas for

Dayton

OHIO

Cincinnati

WEST VIRGINIA

VIRGINIA

Charleston

Frankfort

Richmond

Lexington

KENTUCKY

Roanoke

Blue Ridge Parkway

Danville

Greensboro

TENNESSEE

Chapel Hill

Raleigh

Knoxville

NORTH CAROLINA

Asheville

Fayetteville

Cherokee

Charlotte

Chattanooga

Spartanburg

Wilmington

GEORGIA

N

SOUTH CAROLINA

Anderson

Columbia

0   50   100 mi

Blue Ridge Parkway and its Region

2003

A Socioeconomic Atlas
for
Blue Ridge Parkway
and its Region

by

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Acknowledgments

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About this Atlas

The National Park Service (NPS) initiated a project to develop atlases of regional socioeconomic trends. Four pilot atlases were completed for Harpers Ferry National Historical Park, Joshua Tree National Park, Mount Rainier National Park, and Wilson's Creek National Battlefield. In this next phase of the project, the potential to link these atlases to park planning, e.g., updating the General Management Plan (GMP), is being explored. For more information about the atlas series, contact: Jean McKendry, Ph.D., National Park Service, 1849 C Street NW (3127), Washington DC 20240 (jean_mckendry@partner.nps.gov).

Preface

Protection of the National Park System requires active and scientifically informed management. If park resources – both natural and cultural – are to be protected for future generations, the NPS must develop efficient ways to monitor the condition and trends of natural and human systems. Such monitoring must provide usable knowledge that managers can apply to the preservation of resources. And the NPS must share this information with surrounding communities, stakeholders and partners, to help them make important choices about their future.

Because of these reasons and more, the NPS has embarked on a significant initiative – the Natural Resource Challenge. This atlas is one component in that effort. It is a tool for park managers, planners, community leaders, and others to use in addressing the challenge of preserving the natural and cultural resources of Blue Ridge Parkway. Part of that challenge involves understanding conditions outside park boundaries – conditions which can have significant impacts on park resources. Systematic study and monitoring of regional conditions involves, to a large degree, investigation of human activities. This atlas focuses on such human activities, characterizing them in terms of standardized measures known as socioeconomic indicators.

The atlas can currently serve as an aid to management and planning, as a training tool, and as a means to facilitate public participation. It can be of long-term benefit by establishing baseline data for monitoring changing conditions and trends in the region. Through these and other potential uses, the atlas supports the critical goal of improving park management through a greater reliance on usable scientific knowledge, and contributes to meeting the Natural Resource Challenge.

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Introduction

The purpose of this atlas is to provide park managers, planners, community leaders, and others with a better understanding of changing human activities and socioeconomic conditions in the region surrounding Blue Ridge Parkway. Change in human activities and socioeconomic conditions outside a park's boundaries can create complex park management challenges. Information about regional trends and conditions is needed in order to manage and conserve park resources – both natural and cultural – more effectively. This atlas provides such information in a series of maps, complemented by tables, other graphics, and explanatory text.

Maps are effective ways of conveying information. A map can highlight geographical patterns in data by showing the relationship between *what* is happening and *where* it is happening. For example, a map that shows a park's road network and also shows the locations of traffic accidents may indicate that certain sections of park roadway are particularly hazardous. Or a map that plots where park visitors come from might show that the park is popular with residents from a particular part of the region or the nation.

The maps in this atlas combine *contextual* information (such as boundary lines, roads, and key towns) with *thematic* information (such as demographic or economic statistics). This combination of contextual and thematic information helps the reader observe general trends inherent in the distribution of data. For example, a map that shows the population growth rate for each county in the park region may reveal that all of the highest growth rates are concentrated in counties south of the park.

Each map is designed to allow for easy comparison, so readers can see how conditions and trends in their own counties compare with those in other counties and relate to larger regional patterns. The consistent map design allows readers to make useful comparisons among two or more maps. For example, comparing maps of federal expenditures per person and poverty rates might reveal that federal expenditures tend to be higher in a region's poorer counties.

There are many potential uses for this atlas. For example, park managers can share the atlas with new park staff, regional staff, the media, or policy makers as a way of orienting them to the basic facts about the region. Planners can use the atlas to examine emerging trends outside the park and to prioritize actions to mitigate any anticipated adverse impacts on park resources. Local and regional leaders can consult the atlas to develop environmental policies that support park management goals while remaining responsive to local needs. Researchers can use the atlas to design studies that have practical benefit to park and ecosystem management. Additional uses are discussed in the atlas' concluding section, pages 78 - 79. Regardless of how it is used, the atlas can serve as a useful reference tool that adds to the body of usable scientific knowledge about Blue Ridge Parkway and its surrounding region.

Socioeconomic Indicators: Valuable Management Tools

The Relevance of Human Activities to Park Resource Management

The management of park resources always requires attention to human behavior and activities. Protection of a threatened archaeological site can mean educating visitors about the Antiquities Act. Controlling non-native plant species can require close collaboration with park neighbors and volunteers. Preservation of scenic values can depend upon the monitoring of emissions from electrical generation plants several states away.

While there is an on-going and healthy debate about how to address this "human factor" in park management, a consensus has emerged about three basic principles:

- people are part of park ecosystems, and their needs and activities must be considered in management plans;

- park managers should be concerned with short and long-term trends, as well as the local, regional and national consequences of actions; and

- where appropriate, decisions about park resources should be made collaboratively, including federal agencies, local governments, and citizens in the process.

Managing parks in accordance with these principles requires careful planning, for people have many competing needs.

Careful planning requires an accurate and objective assessment of current conditions as well as on-going trends. Hence, understanding the social, cultural, and economic characteristics of the park region is crucial for successful park management.

The Value of Socioeconomic Indicators

One approach to understanding social, cultural, and economic conditions and trends is to use *socioeconomic indicators*. Socioeconomic indicators are regularly collected economic or social statistics that describe or predict changes and trends in the general state of society. For example, the consumer price index (CPI) keeps track of changes in the price of a typical group of consumer goods. The CPI is used to monitor inflation, to compare the cost-of-living in one region of the country to another, and to support economic policy-making. Socioeconomic indicators can address historical trends, present conditions, or future projections.

An integrated set of socioeconomic indicators can be effective in presenting the "basic facts" about the people of a region. Such basic facts are important to park management, and can be used in many ways: assessing the potential impact of government policies, developing sound resource management strategies, designing effective interpretive programs, increasing public involvement in the planning process, and so forth. Like measures of water quality or wildlife populations, socioeconomic indicators enable managers and citizens to make scientifically informed decisions concerning public resources.

The Integrated Set of Indicators

The indicators in this atlas are not simply a collection of various statistics displayed in maps, but an integrated set of indicators organized around broad areas of human activity that are of particular relevance to park management. The selection of a broad range of relevant indicators is important because the dynamics of human interaction on a regional scale are complex. For example, the growth of a new industry can influence a rise in immigration, which in turn can influence other human activities such as housing development. While industry, immigration, and housing are categorically different indicators, each one could be important for a park manager trying to anticipate growth issues that might impact park visitation or ecological systems.

The integrated set of indicators displayed in this atlas encompasses six general categories:

• *General population* indicators measure how many people live in a given area, where those people are concentrated, their ages, patterns of migration, and so forth. General population indicators provide a profile of the people who are neighbors to the park and potential partners in park management.

• *Economy and commerce* indicators measure the flow and distribution of money, materials, and labor. Economy and commerce indicators provide an overview of the interdependent economic relationships among people, businesses, industries, and government with the park region.

• *Social and cultural* indicators measure aspects of personal and group identity such as cultural origin, political and religious beliefs, health, and language. Social and cultural indicators provide insights into the varying perceptions and expectations that people bring with them when they go to their place of work, participate in a public meeting, or visit a park interpretive site.

• *Recreation and tourism* indicators measure activities specifically related to the provision of accommodations, entertainment, and personal services. Recreation and tourism indicators provide a way to analyze the economic role that travelers, vacationers, and other recreationists play in the region surrounding the park, which is itself closely linked to the recreation/tourism sector.

• *Administration and government* indicators measure the structure, resources, and actions of government organizations. Administration and government indicators provide an orientation to the role of government – local, state, and federal – in the park region.

• *Land use* indicators measure the interactions between people and terrestrial resources such as land, water supply, and vegetation. Land use indicators provide a way to gauge the impact of human activities such as farming, forestry, and urban development upon ecosystems within the park region.

Selecting Specific Indicators

Drawing from the six general categories of socioeconomic indicators described above, a menu of 75 socioeconomic indicators was developed. Each indicator was determined to be readily available and mappable at the county level. From this menu, 17 *core indicators* were selected that would be common to all atlases published in this series. The core indicators provide information useful to all park managers. Incorporating these core indicators throughout the series of atlases enables park managers to make comparisons among parks in different regions of the country. Blue Ridge Parkway staff chose additional indicators from the menu described above. Park staff selected these indicators to customize the atlas so that it would target information relevant to their particular management needs. Figure 1 shows the six general categories and the specific indicators included in this atlas; for each category, indicators are listed in the order they appear in the atlas.

The maps in this atlas are based on county-level data wherever possible. County-level data have several advantages. Good quality data are available at this scale, consistently collected at regular intervals, and comparable across all U.S. counties. Also, counties are stable geographic units for monitoring trends, as little change in county boundaries occurs over time. Finally, as administrative and political units, counties significantly influence environmental change and can be important partners in park management.

Technical Notes

Appendix 1 provides the data sources for the indicators presented in this atlas. Appendix 2 provides technical information on the design of the maps. Appendix 3 includes endnotes and text that provide additional information on the measurement of selected indicators.

Land Use

Ecoregions
Federal and Indian Lands
Metropolitan Areas
Federal Land Management
Farmland
Change in Farmland
Urbanization
Change in Building Permits

General Population

Total Population
Recent Population Change
Historical Population Change
Projected Population Change
Projected Population Density
Population Density Change
Urban Population
Projected Median Age

Economy and Commerce
Industry Earnings
Employment by Industry
Change in Employment
 by Industry
Projected Change in Industry
 Earnings
Projected Change in
 Employment by Industry
Poverty
Home Based Employment

Administration and Government

Congressional Districts
Federal Expenditures
Change in Local Government Revenue
Payments in Lieu of Taxes (PILT)

Blue Ridge Parkway

Recreation and Tourism

Recreation/Tourism Establishments
Recreation/Tourism Revenue
Recreation/Tourism Employment
Seasonal Housing

Social and Cultural Characteristics

Racial Diversity
Educational Attainment

Figure 1. Indicators Included in this Atlas   **core indicator**   additional indicator
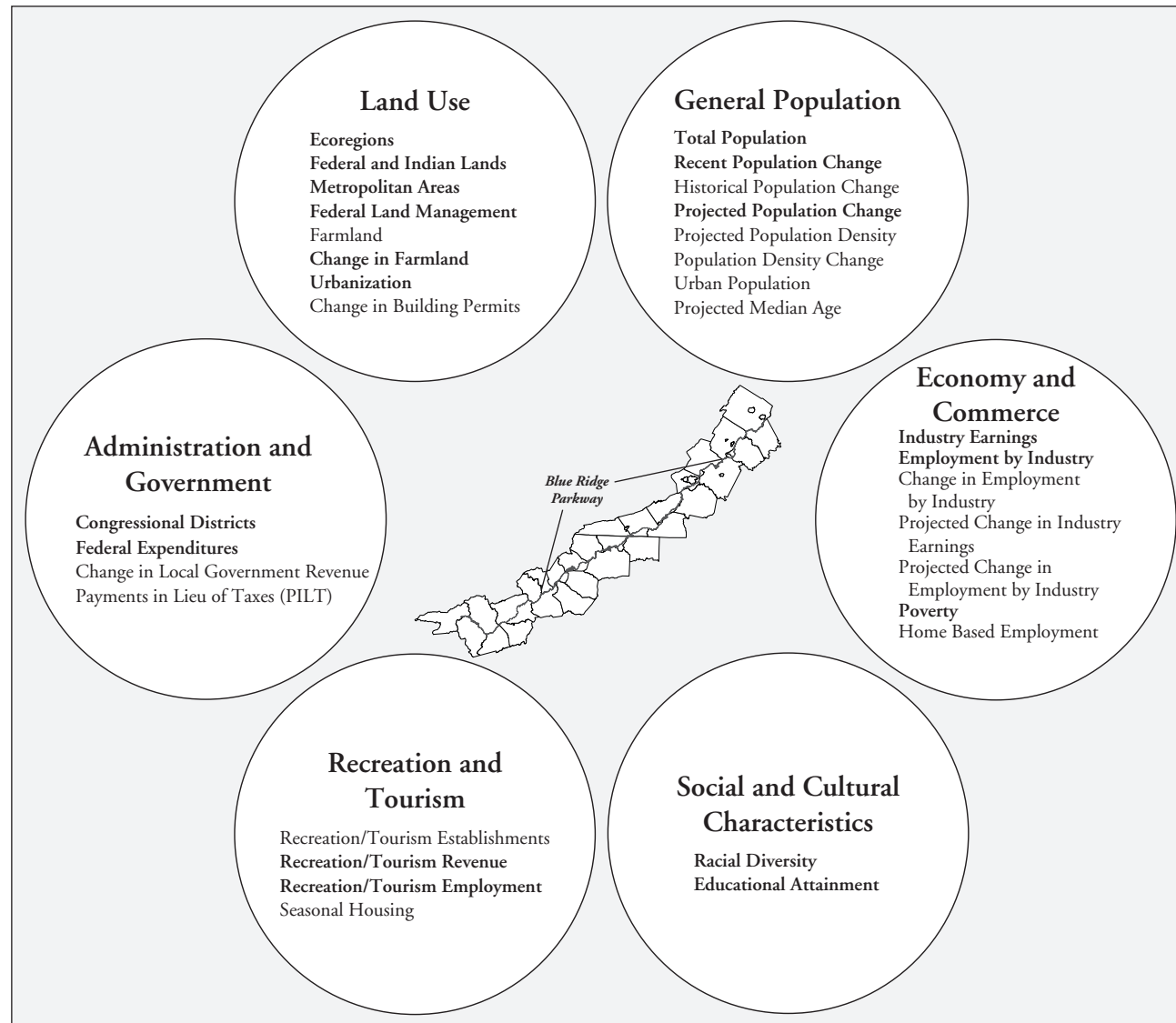
The Region

In selecting the boundaries of the region of interest covered by this atlas, Blue Ridge Parkway staff and GMP team were asked to define the geographic area that has the most significant impact on the park's management. Because the atlas relies on county-level socioeconomic data, the region of interest was restricted to entire counties, rather than parts of counties. The region thus selected includes 12 counties in southwestern Virginia and 17 counties in western North Carolina. The map on the facing page depicts the region in its larger context.

Blue Ridge Parkway passes through a total of 29 counties in Virginia and North Carolina and through, or close to, eight independent cities in Virginia. The north end is approximately 90 miles west of Richmond, VA and the south end is approximately 160 miles northeast of Atlanta, GA. The Blue Ridge Parkway covers five different mountain ranges, all of which are part of the greater Appalachian mountain range system. The north end of the Parkway starts along the Blue Ridge Mountains (average elevation of 3,000 feet) at Rock Fish Gap. It continues south, and near Mount Mitchell State Park turns westward over the Black Mountains and the Craggies, before descending near Asheville, NC. The final leg of the Parkway climbs to elevations of over 6,000 feet in the Balsam Mountains before ending in the Great Smoky Mountains National Park near Cherokee, North Carolina.
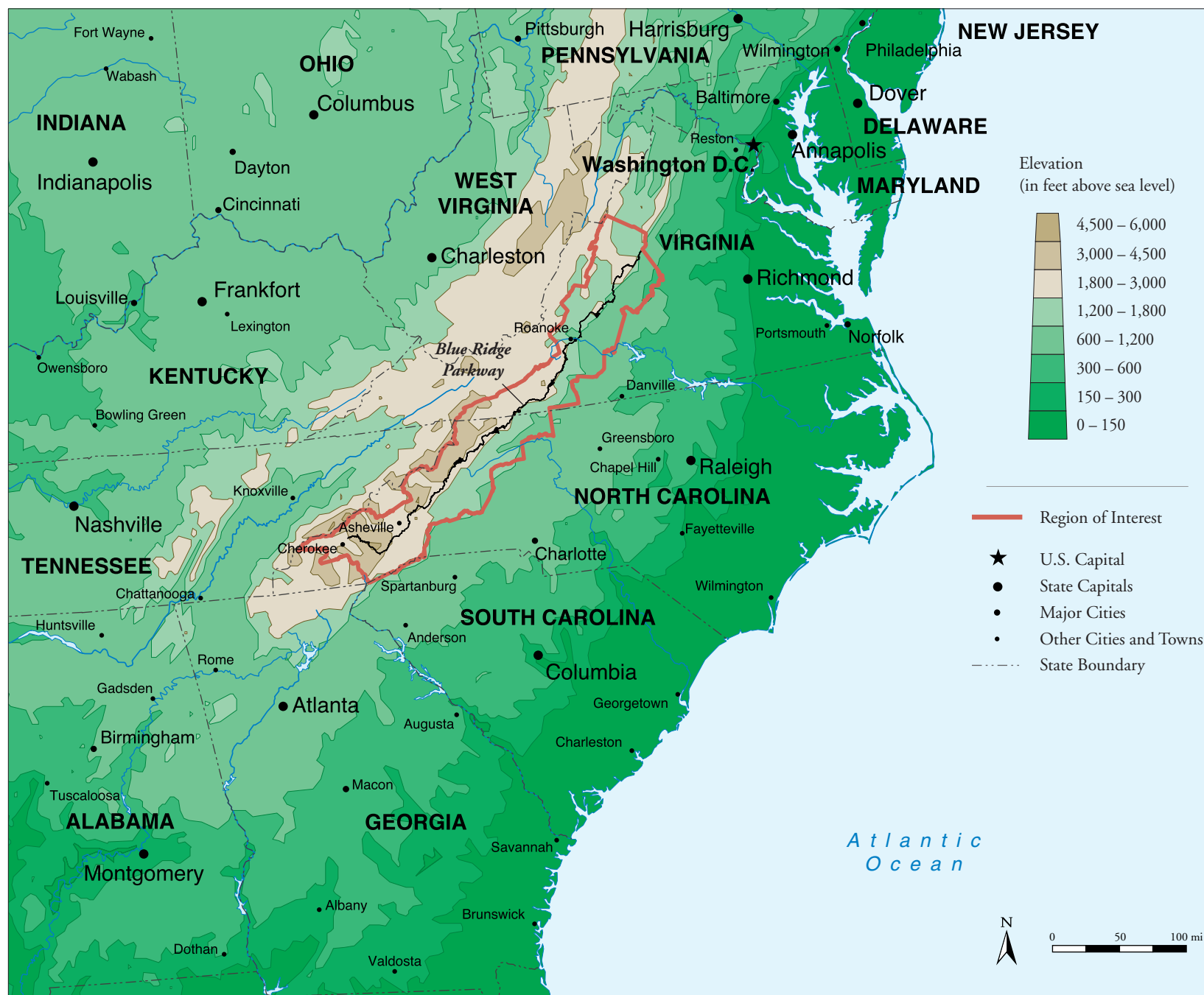
The region is notable for its rich history. The counties that surround the Blue Ridge Parkway have long been home to Native Americans. The Monacan, Saponi, and Tutelo Indians in western Virginia and the Cherokee Indians of North Carolina were the dominant tribes in this region. During the 19th century the region was home to many homestead farms and pioneer industry. Cabins dating to this period can be seen in many places along the parkway. Examples of early industry can be found in exhibits on the Irish Creek Railway, a short stretch of reconstructed narrow-gauge railroad track, and the James River and Kanawha Canal.

The economies of North Carolina and Virginia are very diversified. They are primarily composed of strong manufacturing and service sectors, although agriculture is the traditional industrial sector. Important crops for both North Carolina and Virginia include tobacco, sweet potatoes, corn, soybeans, and peanuts. Chicken and hog production are also major sources of revenue. The Appalachian Mountains provide many valuable resources for this region. North Carolina leads the nation in the production of feldspar, mica, and lithium. Coal is Virginia's largest mineral resource. Textiles, furniture, and chemical production make up the manufacturing sector for this region. A growing high tech service sector can be found in Northern Virginia and the Research Triangle Complex near Chapel Hill North Carolina. The Research Triangle Complex also provides North Carolina with some federal government employment. Federal government employment is stronger in Virginia where "beltway suburbs" like Reston provide tens of thousands of people jobs in nearby Washington DC. Virginia is also home to several major military installations.

In addition to the Blue Ridge Parkway, this region contains several additional national park units, including Shenandoah NP, Booker T. Washington NHP, Carl Sandburg Home NHP, and Great Smoky Mountains NP.

Elevation
(in feet above sea level)

	4,500 – 6,000
	3,000 – 4,500
	1,800 – 3,000
	1,200 – 1,800
	600 – 1,200
	300 – 600
	150 – 300
	0 – 150

Region of Interest

★   U.S. Capital

●   State Capitals

•   Major Cities

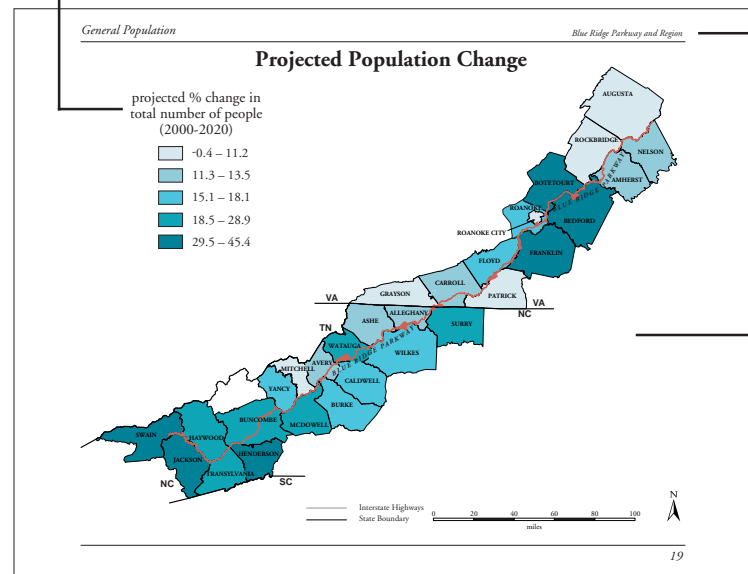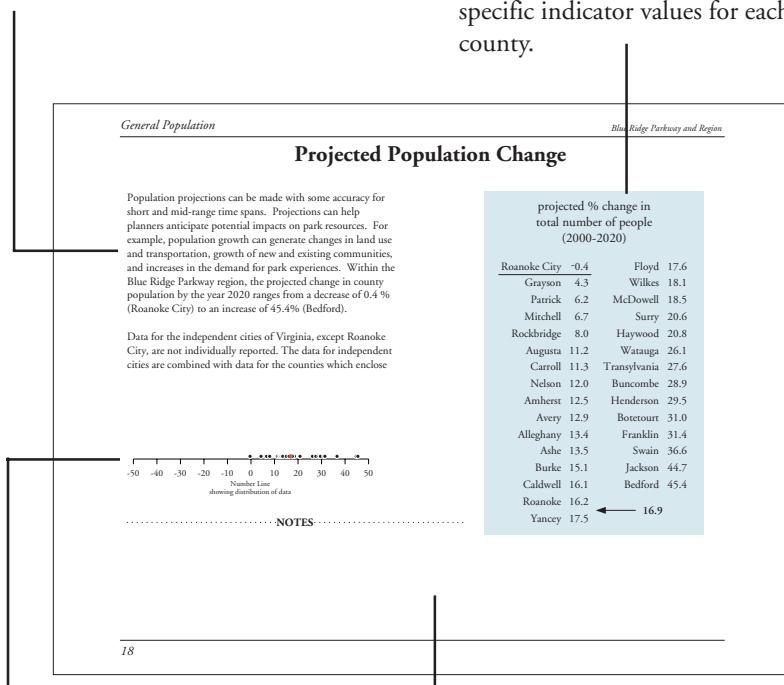·   Other Cities and Towns

–·–·–   State Boundary

Using the Socioeconomic Indicators and Maps

The socioeconomic indicators for the Blue Ridge Parkway region of interest are presented in a series of maps. Best available county-level data are presented for each indicator. The following information is provided for each indicator:

- a brief description of the socioeconomic indicator and an observation about the spatial variation in the data as displayed on the map.

- a table that shows the data and relative rank for each county. The median value is highlighted in **bold**. The table allows the reader to look up and compare specific indicator values for each county.

- a map legend describing how the indicator is measured, the year that the data were gathered, and the range of values for each quintile grouping.

- the name of the general category to which this particular indicator belongs (such as general population or land use). The same base color is used for all indicators in the same general category.

Projected Population Change

Population projections can be made with some accuracy for short and mid-range time spans. Projections can help planners anticipate potential impacts on park resources. For example, population growth can generate changes in land use and transportation, growth of new and existing communities, and increases in the demand for park experiences. Within the Blue Ridge Parkway region, the projected change in county population by the year 2020 ranges from a decrease of 0.4 % (Roanoke City) to an increase of 45.4% (Bedford).

Data for the independent cities of Virginia, except Roanoke City, are not individually reported. The data for independent cities are combined with data for the counties which enclose

projected % change in
total number of people
(2000-2020)

Roanoke City	-0.4	Floyd	17.6
Grayson	4.3	Wilkes	18.1
Patrick	6.2	McDowell	18.5
Mitchell	6.7	Surry	20.6
Rockbridge	8.0	Haywood	20.8
Augusta	11.2	Watauga	26.1
Carroll	11.3	Transylvania	27.6
Nelson	12.0	Buncombe	28.9
Amherst	12.5	Henderson	29.5
Avery	12.9	Botetourt	31.0
Alleghany	13.4	Franklin	31.4
Ashe	13.5	Swain	36.6
Burke	15.1	Jackson	44.7
Caldwell	16.1	Bedford	45.4
Roanoke	16.2		
Yancey	17.5	← **16.9**

-50 -40 -30 -20 -10 0 10 20 30 40 50
Number Line
showing distribution of data

·········· NOTES ··········

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Projected Population Change

projected % change in
total number of people
(2000-2020)

- -0.4 – 11.2
- 11.3 – 13.5
- 15.1 – 18.1
- 18.5 – 28.9
- 29.5 – 45.4

Interstate Highways
State Boundary
0 20 40 60 80 100
miles

19

- a number line that shows the distribution of values for the indicator, useful in understanding patterns in the data. The median value is represented by a **red** dot.

- a section for notes. Atlas users can add their own observations about each indicator, and note questions for further analysis.

- a map that displays general trends inherent in the data. For most indicators, counties are grouped into five classes that correspond to five sub-ranges of data values. These groups are called *quintiles*. The highest-ranked quintile receives the darkest shading. For more information on quintile classification, see Appendix 2, page 84.

Data for independent cities in Virginia are reported separately from data for the counties which enclose them; these data are included directly in the classification applied to the maps, distribution of values in the number lines, and calculation of median values. However, the data table lists these values separately.